

all other licensed and previously applied for co-channel and adjacent channel stations located within 80 kilometers of the location of the proposed station. The criteria contained in § 101.103(d)(2) must be used in this analysis. Applicants must certify that copies of this analysis have been served on all parties which might reasonably be expected to receive interference above the levels set out in § 101.103(d)(2) within 5 days of the date the subject application is filed with the Commission.

(8) If the potential interference will exceed the prescribed limits, a statement shall be submitted with the application for new or modified stations to the effect that all parties have agreed to accept the higher level of interference.

(d) Effective August 1, 1985, when a fixed station that conforms to the technical standards of this subpart (or, in the case of the 12,200–12,700 MHz band, for an incumbent non-MVDDS station or a direct broadcast satellite station) receives or will receive interference in excess of the levels specified in this section as a result of an existing licensee's use of non-conforming equipment authorized between July 20, 1961 and July 1, 1976, and the interference would not result if the interfering station's equipment complied with the current technical standards, the licensee of the non-conforming station must take whatever steps are necessary to correct the situation up to the point of installing equipment which fully conforms to the technical standards of this subpart. In such cases, if the engineering analysis demonstrates that:

(1) The conforming station would receive interference from a non-conforming station in excess of the levels specified in this section; and

(2) The interference would be eliminated if the non-conforming equipment were replaced with equipment which complies with the standards of this subpart, the licensee (or prospective licensee) of the station which would receive interference must provide written notice of the potential interference to both the non-conforming licensee and the Commission's office in Gettysburg, PA. The non-conforming licensee must make all required equipment

changes within 180 days from the date of official Commission notice informing the licensee that it must upgrade its equipment, unless an alternative solution has been agreed to by all parties involved in the interference situation. If a non-conforming licensee fails to make all required changes within the specified period of time, the Commission may require the licensee to suspend operation until the changes are completed.

(e) *Interference dispute resolution procedures.* Should a licensee licensed under this part receive harmful interference from another licensee licensed under this chapter, the parties involved shall comply with the dispute resolution procedures set forth herein:

(1) The licensee experiencing the harmful interference shall notify the licensee believed to be causing the harmful interference and shall supply information describing its problem and supporting its claim;

(2) Upon receipt of the harmful interference notice, the licensee alleged to be causing the harmful interference shall respond immediately and make every reasonable effort to identify and resolve the conflict; and

(3) Licensees are encouraged to resolve the harmful interference prior to contacting the Commission.

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#### § 101.107 Frequency tolerance.

(a) The carrier frequency of each transmitter authorized in these services must be maintained within the following percentage of the reference frequency except as otherwise provided in paragraph (b) of this section or in the applicable subpart of this part (unless otherwise specified in the instrument of station authorization the reference frequency will be deemed to be the assigned frequency):

Frequency (MHz)	Frequency tolerance (percent)
928 to 929 <sup>5</sup> .....	0.0005
932 to 932.5 .....	0.00015
932.5 to 935 .....	0.00025
941 to 941.5 .....	0.00015

Frequency (MHz)	Frequency tolerance (percent)
941.5 to 944 .....	0.00025
952 to 960 <sup>5</sup> .....	0.0005
1,850 to 1,990 .....	0.002
2,110 to 2,200 .....	0.001
2,450 to 2,500 <sup>1</sup> .....	0.001
3,700 to 4,200 <sup>1</sup> .....	0.005
5,925 to 6,875 <sup>1</sup> .....	0.005
6,875 to 7,125 <sup>1</sup> .....	0.005
10,550 to 11,700 <sup>1,2</sup> .....	0.005
11,700 to 12,200 <sup>1</sup> .....	0.005
12,200 to 13,250 <sup>4</sup> .....	0.005
14,200 to 14,400 .....	0.03
17,700 to 18,820 <sup>3</sup> .....	0.003
18,820 to 18,920 <sup>3</sup> .....	0.001
928 to 929 <sup>5</sup> .....	0.0005
18,920 to 19,700 <sup>3</sup> .....	0.003
19,700 to 27,500 <sup>4,7</sup> .....	0.001
27,500 to 28,350 .....	0.001
29,100 to 29,250 .....	0.001
31,000 to 31,300 <sup>6</sup> .....	0.001
31,300 to 40,000 <sup>4</sup> .....	0.03
71,000 to 76,000 <sup>8</sup> .....	
81,000 to 86,000 <sup>8</sup> .....	
92,000 to 95,000 <sup>8</sup> .....	

<sup>1</sup>Applicable only to common carrier LTTS stations. Tolerance for 2450–2500 MHz is 0.005%. Beginning Aug. 9, 1975, this tolerance will govern the marketing of LTTS equipment and the issuance of all such authorizations for new radio equipment. Until that date new equipment may be authorized with a frequency tolerance of .03% in the frequency range 2,200 to 10,500 MHz and .05% in the range 10,500 MHz to 12,200 MHz, and equipment so authorized may continue to be used for its life provided that it does not cause interference to the operation of any other licensee. Beginning March 1, 2005, new LTTS operators will not be licensed and existing LTTS licensees will not be renewed in the 11.7–12.2 GHz band.

<sup>2</sup>See subpart G of this part for the stability requirements for transmitters used in the Digital Electronic Message Service.

<sup>3</sup>Existing type accepted equipment with a frequency tolerance of  $\pm 0.03\%$  may be marketed until December 1, 1988. Equipment installed and operated prior to December 1, 1988 may continue to operate after that date with a minimum frequency tolerance of  $\pm 0.03\%$ . However, the replacement of equipment requires that the current tolerance be met.

<sup>4</sup>Applicable to private operational fixed point-to-point microwave and stations providing MVDDS.

<sup>5</sup>For private operational fixed point-to-point microwave systems, with a channel greater than or equal to 50 KHz bandwidth,  $\pm 0.0005\%$ ; for multiple address master stations, regardless of bandwidth,  $\pm 0.00015\%$ ; for multiple address remote stations with 12.5 KHz bandwidths,  $\pm 0.00015\%$ ; for multiple address remote stations with channels greater than 12.5 KHz bandwidth,  $\pm 0.0005\%$ .

<sup>6</sup>For stations authorized prior to March 11, 1997, transmitter tolerance shall not exceed 0.03%.

<sup>7</sup>The frequency tolerance for stations authorized on or before April 1, 2005 is 0.03%. Existing licensees and pending applicants on that date may continue to operate after that date with a frequency tolerance of 0.03%, provided that it does not cause harmful interference to the operation of any other licensee. For analog systems, if the channel bandwidth is greater than 30 MHz up to 50 MHz, the frequency tolerance standard will be 0.03%; if the channel bandwidth is 30 MHz or less, then the frequency tolerance standard will be 0.003%. This analog standard is conditional provided that harmful interference is not caused to digital stations operating within the 0.001% tolerance standards. If harmful interference is caused to stations operating with the more stringent standard, the onus shall be on the operators with the less stringent parameters to develop an engineering solution to the problem. For exceptions, see § 101.147 and § 101.507.

<sup>8</sup>Equipment authorized to be operated in the 71,000–76,000 MHz, 81,000–86,000 MHz, 92,000–94,000 MHz and 94,100–95,000 MHz bands is exempt from the frequency tolerance requirement noted in the table of paragraph (a) of this section.

(b) Heterodyne microwave radio systems may be authorized at a somewhat less restrictive frequency tolerance (up to .01 percent) to compensate for frequency shift caused by numerous repeaters between base band signal insertion. Where such relaxation is sought, applicant must provide all calculations and indicate the desired tolerance over each path. In such instances the radio transmitters and receivers used must individually be capable of complying with the tolerance specified in paragraph (a) of this section. Heterodyne operation is restricted to channel bandwidth of 10 MHz or greater.

(c) As an additional requirement in any band where the Commission makes assignments according to a specified channel plan, provisions must be made to prevent the emission included within the occupied bandwidth from radiating outside the assigned channel at a level greater than that specified in § 101.111.

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#### § 101.109 Bandwidth.

(a) Each authorization issued pursuant to these rules will show, as the emission designator, a symbol representing the class of emission which must be prefixed by a number specifying the necessary bandwidth. This figure does not necessarily indicate the bandwidth actually occupied by the emission at any instant. In those cases where part 2 of this chapter does not provide a formula for the computation of the necessary bandwidth, the occupied bandwidth may be used in the emission designator.

(b) Stations in this service will be authorized any type of emission, method of modulation, and transmission characteristic, consistent with efficient use of the spectrum and good engineering practice, except that Type B, damped-wave emission will not be authorized.